

A REVIEW OF THE GENUS APHENDALA WALKER IN CHINA
(LEPIDOPTERA, LIMACODIDAE)

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Abstract Ten species of the genus *Aphendala* Walker are recognized from China, including two new species, *A. pseudoana* and *A. furallata*, described herein. *A. aperiens* (Walker) is reported for the first time in China. The photographs and the genital illustration of the examined species are given. A key to the Chinese species of the genus is provided.
Key words Lepidoptera, Limacodidae, *Aphendala*, new species, China.

Introduction

The genus *Aphendala* was erected by Walker in 1865, based on the type species, *Aphendala transversata* Walker. It was revived from the synonymy with *Thosea* and was used as a temporary repository for the species evicted from *Thosea* (s. str.) by Holloway in 1986. Wei & Wu (2008) reported 12 Chinese species of *Thosea* (s. str.).
At present, the genus *Aphendala* Walker contains more than 20 species in the Oriental Region (Holloway, 1986, 1987; Yoshimoto, 1994). In China, six species have been recorded (Hering, 1931, 1933; Cai, 1981, Inoue, 1992) up to now. In this paper, ten species are reported from China, including two species described as new to science, one species newly recorded in China and one species inquirenda.

The type specimens of the new species are deposited in the Institute of Zoology, Chinese Academy of Sciences, Beijing, China.

Genus *Aphendala* Walker, 1865
Aphendala Walker, 1865. *List Specimens lepid. Insects Cdh Br. Mus.*, 32: 494.

Type species: *Aphendala transversata* Walker, 1865. By monotypy.
Male antenna with long double pectinations gradually shortening towards apex. White spot at apex of fore tibia usually absent. Forewing with R₂ separate, almost from upper angle of cell, R₃₊₅ stalked. Hindwing with M₁ and R_s stalked.

Male genitalia with typical of limacodid ground plan; juxta long, apical portion membranous, usually bearing short hair densely. Female genitalia with spiral ductus bursae and a crescent signum.

The genus can be distinguished easily from *Thosea* by the valva lacking long process on the base of sacculus in the male genitalia.

Distribution: China, Sri Lanka, India, Nepal.

- Key to the species in China**
- 1. Forewing without an oblique fascia to middle of inner margin 2
Forewing with an oblique fascia to middle of inner margin 5
 - 2. Forewing with subterminal fascia thick, from disal 2/3 of costal margin to tornus 3
Forewing with subterminal fascia thin, from costal margin near apex to tornus 4
 - 3. Forewing with discal spot indistinct; aedeagus with single spine at apex *A. monogramma*
Forewing with discal spot obvious; aedeagus with forked spines at apex *A. furcellata* **sp. nov.**
 - 4. Forewing with a black dot in cell *A. conspersa*
Forewing without a black dot in cell *A. castanea*
 - 5. Forewing with the oblique fascia at basal 1/3 6
Forewing with the oblique fascia at basal 2/3 8
 - 6. Forewing smoky gray, the oblique fascia lined with pale at outside *A. cana*
Forewing dark brown, the oblique fascia not lined with pale at outside 7
 - 7. Forewing with discal spot obvious *A. pseudocana* **sp. nov.**
Forewing with discal spot indistinct *A. aperiens*
 - 8. Wing expanse less than 25 mm *A. rufa*
Wing expanse more than 35 mm 9
 - 9. Forewing dark reddish brown, discal spot indistinct *A. grandis*
Forewing yellowish brown, discal spot obvious *A. sp.*

***Aphendala aperiens* (Walker, 1865) New record to China** (Figs 1, 9)
Miresa? *aperiens* Walker, 1865. *List Specimens lepid. Insects Cdh Br. Mus.*, 32: 476.
Thosea aperiens (Walker): Hering, 1931. In: Seitz, *Macrolep. World*, 10: 711, fig. 88k.
Aphendala aperiens (Walker): Holloway *et al.*, 1987: 43.

Specimens examined. Guangxi, Longsheng (900m), 2 ♂♂, 10 June 1963, WANG Churr Guang (L06175, L06175a).
Distribution. Guangxi; India, Sri Lanka.

***Aphendala pseudocana* sp. nov.** (Figs 2, 10)
♂ Wing expanse 20-22 mm. Body dark brown. White spot at apex of fore tibia present, but small. Forewing yellowish grey-brown, an oblique line at basal

1/3; discal spot very small; subterminal line relatively indistinct, almost straight, from costal margin before apex to toms. Hindwing brown.

Male genitalia (Fig. 10). Uncus short, with a small subapical process; gnathos relatively short, apex pointed; valva narrow and long, tapering to a rounded apex; juxta broad; aedeagus narrow and long, arched, apex pointed, comuti absent.

Holotype ♂, Yunnan, Yunlong, 21 June 1981, ZHANG Xue-Zhong (L06179). Paratype 1 ♂, same data as holotype.

Distribution. Yunnan (Yunlong).

Diagnosis. This new species is closely similar to *A. ana* (Walker, 1865) in the general appearance, but differs from the latter by the forewing with an indistinct subterminal line and the small subapical process of the uncus and the simple valva in the male genitalia. While in *A. ana*, the uncus is large and forked apically, and the valva is divided into 2 parts.

Etymology. The name is derived from Greek “*pseudes*” (= false) and “*ana*”, corresponding to the similarity with *A. ana* (Walker).

Aphendala rufa (Wileman, 1915) (Figs. 3, 11)

Thosea rufa Wileman, 1915. *Entomol.*, 48: 19.

Aphendala rufa (Wileman): Holloway *et al.*, 1987: 43.

Specimens examined. Guangxi, Guilin (200 m), 1 ♂, 13 July 1963, WANG Chur-Guang. Fujian, Mt. Wuyi (900 m), 1 ♂, 5 July 1963, ZHANG You-Wei (L06180); Shaxian, 1 ♂, 4 May 1978, HUANG Bang-Kang. Hunan, Mt. Heng, 1 ♂, 24 May 1974, ZHANG Bao-Lin.

Distribution. Fujian, Hunan, Guangxi, Taiwan.

Aphendala grandis (Hering, 1931) (Figs. 4, 12)

Thosea grandis Hering, 1931. In: Seitz, *Macrolep. World*, 10: 714, fig. 89d.

Aphendala grandis (Hering): Holloway *et al.*, 1987: 43.

Specimens examined. Yunnan, Changning (1300 m), 1 ♂, 15 June 1979; Luxi (1980 m), 1 ♂, 19 June 1979; Menghai (1200 m), 3 ♂♂, 26 May 1982, LUO Heng-Wen; Jinping, Hetouzai (1700 m), 4 ♂♂, 11-16 May 1956, HUANG Ke-Ren (L06172); Lincang (1180 m), 1 ♂, 16 July 1980, LIU Yur-Chuan. Guangxi, Mt. Miaoer (800-1150 m), 2 ♂♂, 2-7 July 1985, FANG Cheng-Lai; Jinxiu, Mt. Shengtang (900 m), 1 ♂, 19 May 1999, HAN Hong-Xiang.

Distribution. Guangxi, Yunnan; India (Khasis).

Remarks. This species is very similar to *A. rufa* Wileman, only differs from the latter by the larger size and longer aedeagus in male genitalia.

Aphendala sp. (Figs. 5, 13)

♀. Wing expanse 42-48 mm. Base of antenna and apex of fore tibia without white spot. Head and thorax yellowish brown; abdomen dark yellowish brown,

terminal segment and anal tuft blackish brown. Forewing brownish yellow with reddish tint, scattered with thin black scales; discal spot rounded, obvious; outer line blackish brown, from distal 1/4 of costal margin obliquely to middle of inner margin; subterminal line dark brown, from costal margin near apex to toms. Hindwing yellowish brown.

Female genitalia (Fig. 13). Anterior apophysis shorter than 1/3 posterior apophysis; ductus bursae very long, basal 1/3 narrow, apical 2/3 relatively wide, spiral; corpus bursae ovate, large; signum narrow, crescent.

Food plant: *Camellia*.

Specimens examined. Yunnan, Menghai (1200 m), 3♀, 29-30 July 1982, LUO Heng-Wen (L06261).

Distribution. Yunnan (Menghai).

Remarks. This species is recognized on the female only, while *A. grandis* (Hering) is on the male only. Both of them feed on *camellia* in Menghai County, therefore they might be the same species. As they are different in the external characters and the date of emergence, it is treated as species inquirenda here.

Aphendala cana (Walker, 1865)

Parasa cana Walker, 1865. *List Specimens lepid. Insects Coll. Br. Mus.*, 32: 484.

Aphendala transversata Walker, 1865. *List Specimens lepid. Insects Coll. Br. Mus.*, 32: 495.

Natada basifusca Kawada, 1930. *J. Imp. Agr. Exp. Sa.*, 1 (3): 328.

Thosea cana (Walker): Hering, 1931. In: Seitz, *Macrolep. World*, 10: 713, fig. 89c.

Aphendala cana (Walker): Holloway *et al.*, 1987: 43.

Food plant: *Cassia*.

Specimens examined. None.

Distribution. Taiwan; Sri Lanka, India, Nepal.

Aphendala conspersa Butler, 1880

Aphendala conspersa Butler, 1880. *Proc. Zool. Soc. London*, 673.

Thosea conspersa (Butler): Hering, 1931. In: Seitz, *Macrolep. world*, 10: 712.

Specimens examined. None.

Distribution. Taiwan.

Aphendala castanea (Wileman, 1911) **comb. nov.** (Figs. 6, 14)

Thosea castanea Wileman, 1911. *Entomol.*, 44: 204.

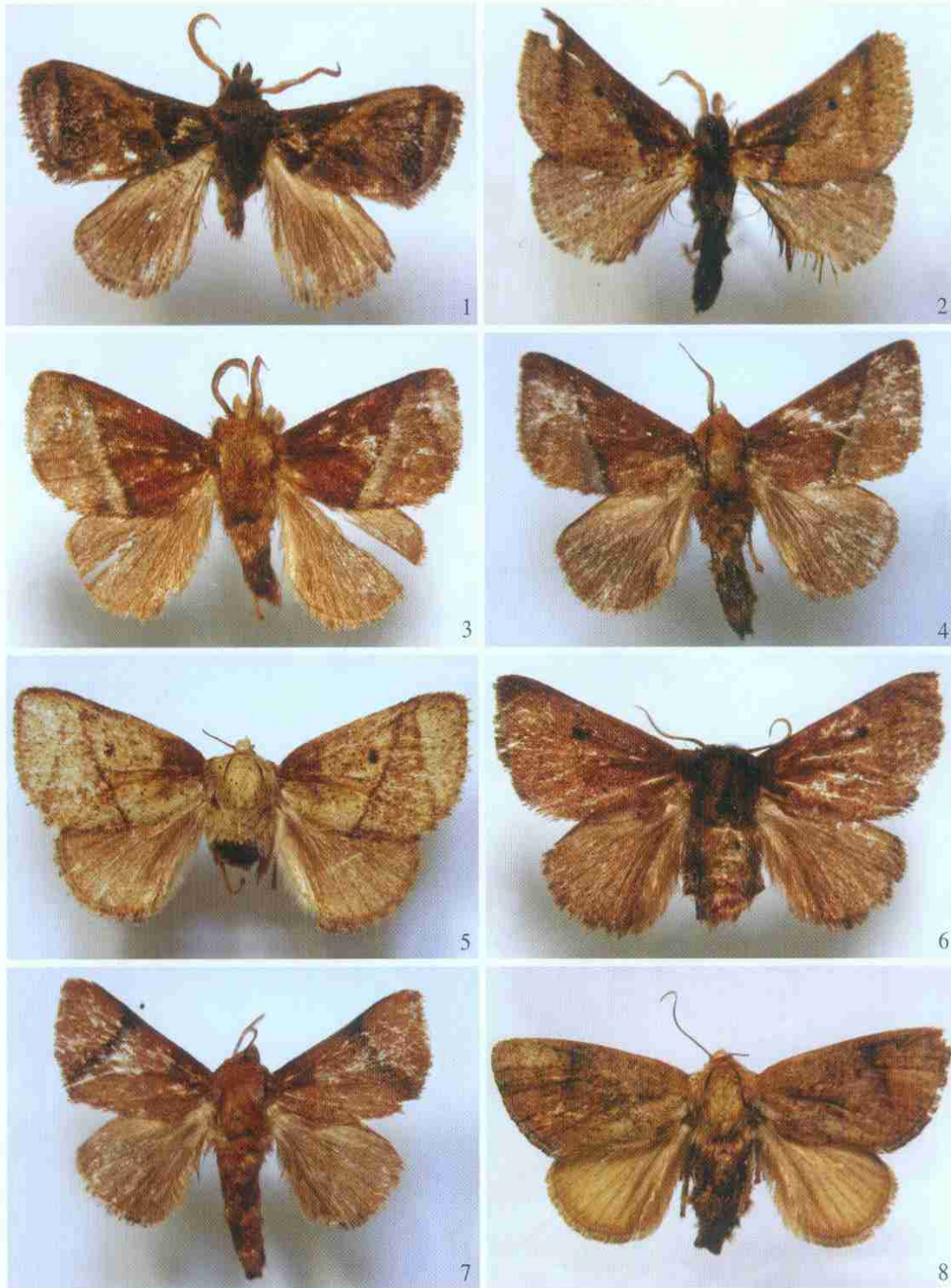
Specimens examined. Guangxi, Jinxiu (1100 m), 3 ♂♂, 2 July 2000, LI Werr-Zhu, YAO Jian (L06178, L06178a).

Distribution. Guangxi, Taiwan.

Aphendala monogramma (Hering, 1933) **comb. nov.** (Figs. 7, 15)

Praxetora monogramma Hering, 1933. In: Seitz, *Macrolep. World*, Suppl. 2: 204, fig. 15h.

Specimens examined. Hubei, Xingshan (1350 m), 1 ♂, 17 June 1993, LI Werr-Zhu (L06262). Guangxi,



Figs 1-8. Adults. 1. *A. aperiens* (Walker). 2. *A. pseudocana* sp. nov., ♂, paratype. 3. *A. rufa* (Wileman). 4. *A. grandis* (Hering). 5. *A.* sp. 6. *A. castanea* Wileman. 7. *A. monogramma* (Hering). 8. *A. furcillata* sp. nov., ♀, paratype.

Jinxiu (1100 m), 2 ♂♂, 10 May 1999, LIU DaJun (L06263); Jinxiu (550 m), 1 ♂, 12 May 1999, LIU DaJun.

Distribution. Hubei, Guangxi, Sichuan.

Aphendala furcillata sp. nov. (Figs. 8, 16)

Wing expanse 32-36 mm. Body brown. White spot at apex of fore tibia present. Forewing brown, sparsely scattered with black scales; a straight black fascia from 2/3 of costal margin to tornus; discal spot conspicuous. Hindwing dark grey. Forewing with a wider fascia in

female than that in male. Underside darker than upperside.

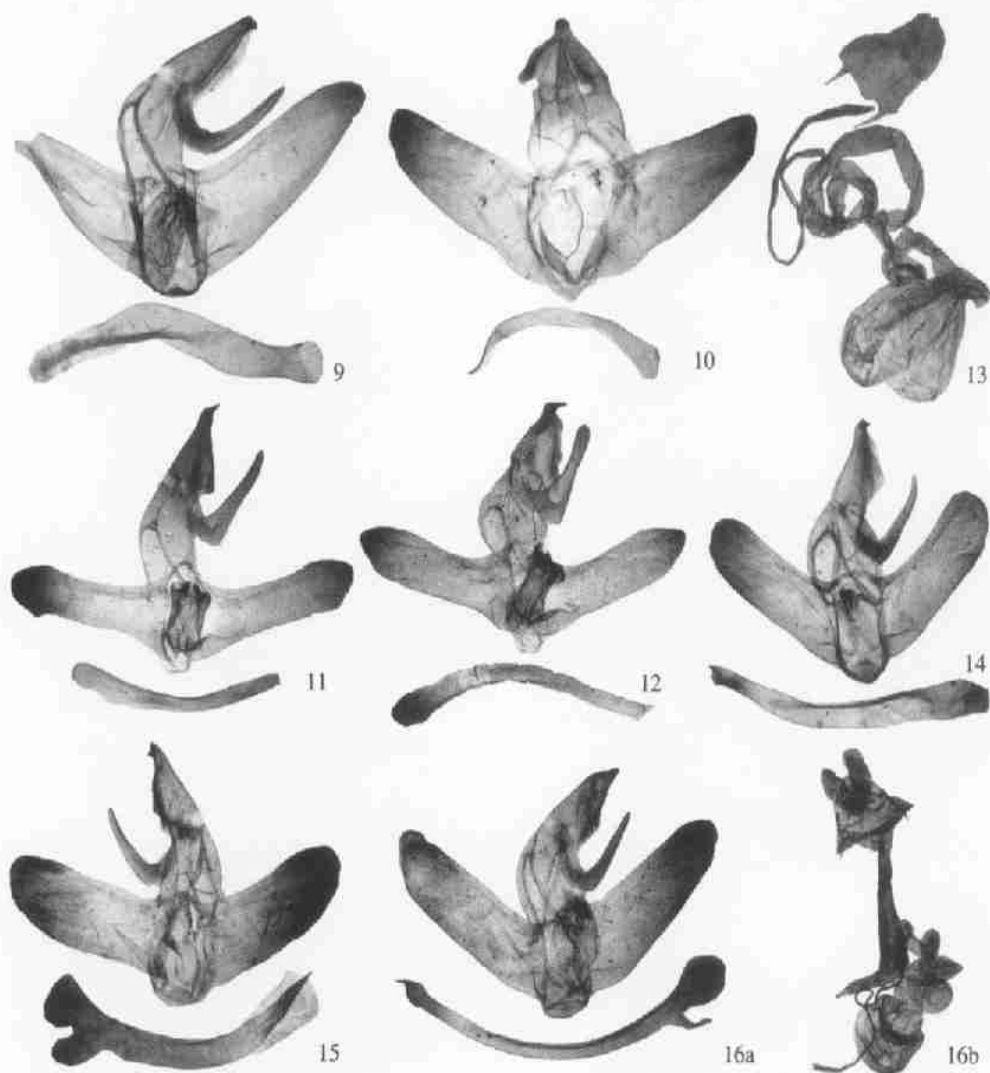
Male genitalia (Fig. 16a). Uncus with a small subapical process; gnathos long, apex pointed; valva narrow and long, slightly tapering to a rounded apex; juxta long, apical portion membranous bearing dense short hair; aedeagus very long, about 2 times as long as valva length, a bar at middle, apex forked.

Female genitalia (Fig. 16b). Anterior apophysis almost as long as posterior apophysis; 8th sternite with a pair of membranous processes in lateral side and a

sclerotized crescent area in middle; ductus bursae quite long, funneled membrane at base, following portion wider, most narrow in middle, apical portion wide and

spiral; corpus bursae rounded; signum narrow and long, crescent.

Food plants: *Camellia*, *Vernicia*.



Figs 9-16. Genitalia. 9. *A. qberiens* (Walker). 10. *A. pseudoana* sp. nov. 11. *A. nufa* (Wileman). 12. *A. grandis* (Hering). 13. *A. sp.* 14. *A. castanea* Wileman. 15. *A. monogramma* (Hering). 16. *A. furallata* sp. nov. (a. Male, b. Female).

Holotype ♂, Sichuan, Panzhihua, 12-22 June 1981, ZHANG Bao-Lin (L06264). Paratypes: 4 ♂♂, same data as holotype; 1 ♂, Yunnan, Jingdong (1170 m), 25 June 1956, Zagulyaev; 1 ♂, Kunming, Guandu (2160 m), 4 June 1980; 1 ♂, Guandu (2300 m), 1 July 1980; 1 ♂, Longling (1400 m), 4 June 1979; 1 ♂, Malong (2100 m), 7 June 1919, II Jir-Lian; 1 ♂, Malong (2200 m), 16 June 1979, ZHAO Qing-Sheng; 1 ♀, Qiubei (1300 m), 28 June 1979, CHANG Yur-Ying; 1 ♂, Qujing (2000 m), 6 June 1979, CHEN Ming-Kun; 4 ♀♀, Menghai (1200 m), 17-18 July 1982, LUO Heng-Wen, 3 ♂♂, 10 July 1980, LUO Heng-Wen, 1 ♀, 5 ♂♂, 2-4 Aug. 1978, LUO Heng-Wen (L06265, L06266), 1 ♂,

21 July 1958, WANG Shu-Yong; 1 ♂, Menghai (1100 m), 16 July 1982, ZHAO Qing-Wu; 1 ♂, Luxi (980m), 19 June 1979, HUANG Sheng-Hua; 1 ♀, Luxi (1400 m), 15 July 1983, DU Zhao-Yi; 1 ♂, Lincang (1100 m), 28 June 1980, QIU Hui-Zai (L06273); 1 ♂, Mengzi (1600 m), 6 June 1979, LIU Jia-Fu; 1 ♂, Weishan (2600 m), 17 July 1980; 1 ♂, Pingbian, Mt. Dawei (1500 m), 18 June 1956, HUANG Ke-Ren; 1 ♂, Yiliang (1840 m), 24 June 1982, LUO Zheng-Li; 1 ♂, Wuding (1800 m), 24 June 1982; 1 ♂, Yunlong (2500 m), 9 Aug. 1982, DU Qian.

Distribution. Sichuan, Yunnan.

Diagnosis. This new species is related to *A.*

monogramma (Hering), but differs from the latter by the forewing with the discal spot and the long aedeagus forked apically (about 2 times as long as valva length) in the male genitalia. While in *A. monogramma*, the aedeagus is 1.5 times as long as valva length and the apex is not forked.

Etymology. The name is derived from Latin “*furallatus*” (= forked), corresponding to the apically forked aedeagus.

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中国润刺蛾属系统分类研究 (鳞翅目, 刺蛾科)

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摘 要 整理出中国润刺蛾属 *Apherdala* Walker 共 10 种, 包括 2 新种, 拟灰润刺蛾 *A. psaudocana* 与 叉茎润刺蛾 *A. furallata*, 及 1 新纪录种, 野润刺蛾 *A. apeniens* (Walker)。编制

关键词 鳞翅目, 刺蛾科, 润刺蛾属, 新种, 中国.

中图分类号 Q969. 431. 2

了本属已知种的检索表, 提供了视检种的成虫彩色照片和外生殖器特征图。模式标本保存在中国科学院动物研究所。